

Historic, archived document

Do not assume content reflects current scientific knowledge, policies, or practices.

LIBRARY
CURRENT SERIAL RECORD
JY 2-1950
U. S. DEPARTMENT OF COMMERCE

831/B
UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH ADMINISTRATION
BUREAU OF ENTOMOLOGY AND PLANT QUARANTINE

INSECT PEST SURVEY

Special Supplement (1950, No. 5)

Issued December 7, 1950

✓ DISTRIBUTION AND HOST PLANTS OF THE RHODES-GRASS SCALE
IN THE UNITED STATES IN 1950^{1/}

By Harvey L. Chada and Everett A. Wood, Jr.
Division of Cereal and Forage Insect Investigations
and Paul T. Rihard
Texas Agricultural Experiment Station^{2/}

Distribution

The Rhodes-grass scale (Antonina graminis (Mask.)) was first reported in the United States in 1942 by Nico Diaz, agronomist for King Ranch, who found it infesting Rhodes grass (Chloris gayana Kunth) at Kingsville, Tex. On January 1, 1950, infestations had been recorded from 21 counties in Texas, 1 parish in Louisiana, and 3 counties in Florida. As little was known regarding the extent of the infestation in the remainder of the Gulf coast area, a survey in that area was conducted in the spring of 1950. In Texas a county-by-county survey was made until the northern limits of the infestation were established. In the other States bordering on the Gulf of Mexico the survey was much more limited, and the extent of the infested area probably has not been definitely established. The information presented herein therefore represents the known infested area as of June 30, 1950.

The presence of the scale in a county was determined by examining the favored host plants. As soon as the scale was found, no further surveying was done in a county. Positive identification of the specimens collected was made by Harold M. Morrison, Division of Insect Identification, Bureau of Entomology and Plant Quarantine. A record was also kept of the host plants. Nico Diaz, King Ranch, Kingsville, Tex., identified most of the less common ones.

^{1/} Approved as Texas Agricultural Experiment Station Miscellaneous Publication No. 60.

^{2/} The Texas Agricultural Experiment Station cooperated in obtaining information on the extent of the infestation in Texas. Information on the infestation in other States was obtained by the Bureau of Entomology and Plant Quarantine.

The known infested area in the United States now comprises 49 counties in Texas, 12 parishes in Louisiana, and 16 counties in Florida. The States and respective counties, or parishes, from which the scale has been collected, as of June 30, 1950, are listed below and are also shown on the map.

Counties or parishes infested with the Rhodes-grass scale in
Texas, Louisiana, and Florida

| <u>Texas:</u> | <u>Texas (cont.):</u> | <u>Texas (cont.):</u> | <u>Louisiana:</u> | <u>Florida:</u> |
|---------------|-----------------------|-----------------------|-------------------|-----------------|
| Aransas | Goliad | Live Oak | Acadia | Broward |
| Atascosa | Gonzales | McMullen | Allen | Charlotte |
| Bee | Guadalupe | Matagorda | Calcasieu | Dade |
| Bexar | Harris | Maverick | East Baton | Glades |
| Brazoria | Hays | Medina | Rouge | Hendry |
| Brooks | Hidalgo | Nueces | Iberia | Highlands |
| Caldwell | Jackson | Orange | Jefferson | Hillsborough |
| Calhoun | Jefferson | Refugio | Jefferson | Lee |
| Cameron | Jim Hogg | San Patricio | Davis | Manatee |
| Chambers | Jim Wells | Starr | Orleans | Marion |
| Comal | Karnes | Uvalde | St. Charles | Monroe |
| De Witt | Kenedy | Victoria | St. Landry | Orange |
| Dimmit | Kleberg | Webb | St. Martin | Palm Beach |
| Duval | La Salle | Wharton | St. Mary | Polk |
| Frio | Lavaca | Willacy | | Sarasota |
| Galveston | Liberty | Wilson | | Seminole |
| | | Zavala | | |

It is of interest to note that the 30th parallel approximates the northern limits of the known infested area in the United States. In Texas this area lies roughly south of a line running from Del Rio on the west through Austin and to Beaumont on the east. In Louisiana it lies south of a line running from Beaumont, Tex., to Baton Rouge, La. In Florida the infested area lies south of a line running from the Gulf of Mexico through Ocala to Daytona Beach on the Atlantic coast. No infestation was found in the portions of Mississippi and Alabama bordering on the Gulf of Mexico, or in the northern part of Florida.

Rhodes-grass scale probably was present in the United States for a considerable period prior to 1942, when it was first recorded, since the habits of the scale are such that dispersion over so large an area within the past 8 years is unlikely. There are no known winged forms, and motility in the life of the scale is limited to a few days during the first nymphal instar. Consequently, dispersion must be accomplished by the transportation of the scale on cuttings of the susceptible host plants, which is probably not common,

or by the transportation of the active nymphs on animals or vehicles. The small size of the nymphs and the short period of their activity would preclude any extensive dispersion by crawling.

Host Plants

By June 30, 1950, the Rhodes-grass scale had been collected from 44 host plants in the United States. All are members of the grass family Poaceae (Gramineae)^{2/}. The subfamily Poatae (or Festucoideae) is represented by 15 hosts of which 9 belong to the tribe Chlorideae, 5 to Festuceae, and 1 to Agrostideae. The subfamily Panicateae (or Panicoideae) is represented by 29 hosts of which 19 belong to the tribe Paniceae and 10 to Andropogoneae. The host plants are listed on page 4.^{3/}

The host plants were collected in the process of determining the distribution of the scale, and no special effort was made to determine all of them. Therefore, the list should not be considered as complete. Many more hosts may be found.

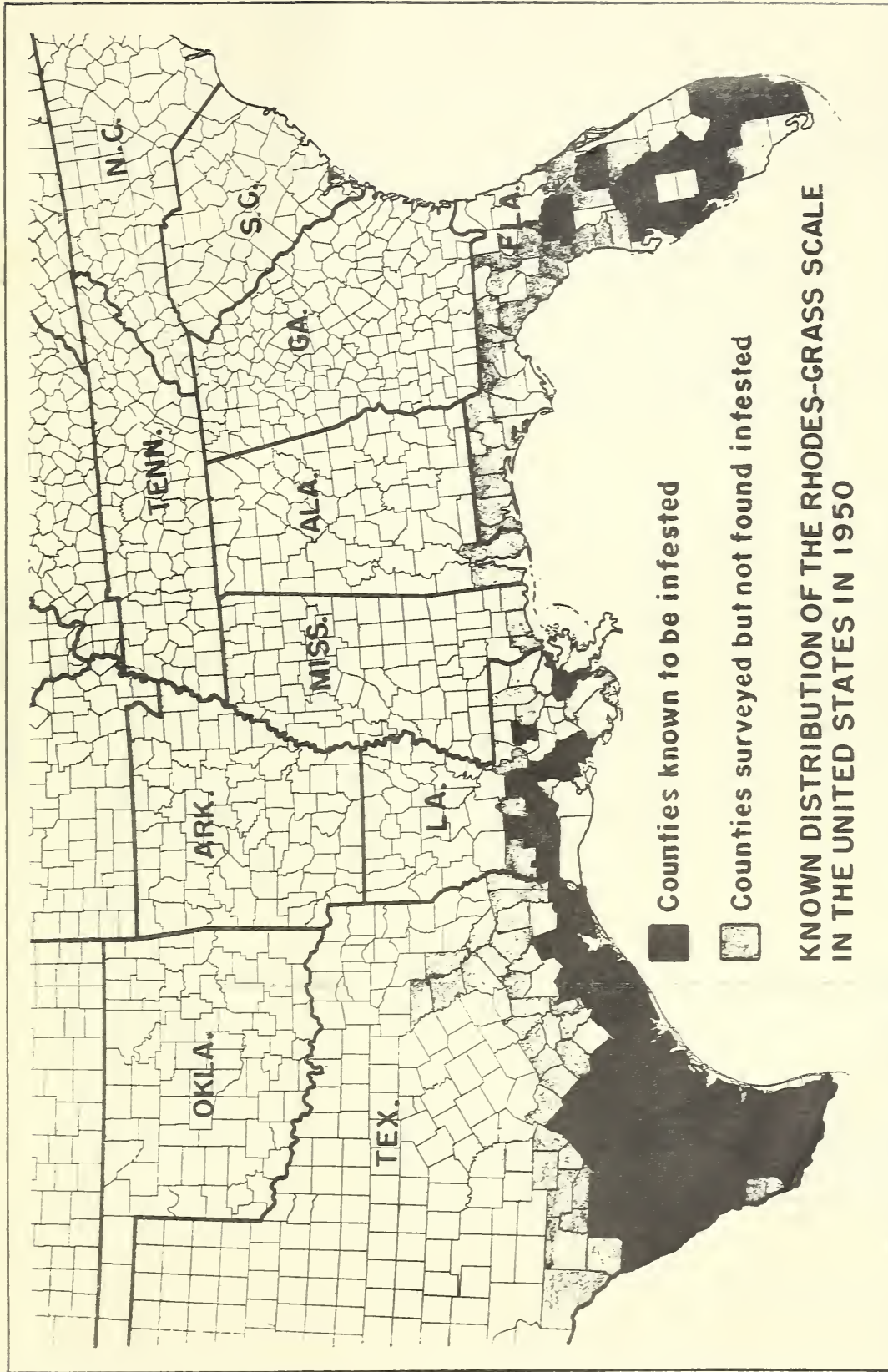
Among the 44 host plants, several appear to be favored by the scale more than others. These are Rhodes grass (Chloris gayana), Johnson grass (Sorghum halepense), Bermuda grass (Cynodon dactylon), St. Augustine grass (Stenotaphrum secundatum), and Para grass (Panicum purpurascens). They are not ranked in the order of susceptibility. These five host plants are usually heavily infested whereas many of the others are only lightly infested.

^{2/} Classification from Texas Grasses, by W. A. Silveus (San Antonio, Tex.), 1933.

^{3/} Common names from Texas Grasses (see footnote 2), and "A Guide to Plant Names in the Western Gulf Region," by Simon E. Wolff (U. S. Soil Conservation Service), 1948.

Host Plants of the Rhodes-Grass Scale

| | |
|---|--------------------------|
| <u>Andropogon littoralis</u> Nash | Seacoast beardgrass |
| <u>Andropogon saccharoides</u> Swartz | Silver beardgrass |
| <u>Andropogon sericeus</u> R. Br. | Silky bluestem |
| <u>Arundo donax</u> L. | Giant reed |
| <u>Bouteloua filiformis</u> (Fourn.) Griffiths | Large mesquite |
| <u>Bouteloua hirsuta</u> Lag. | Hairy grama |
| <u>Brachiaria ciliatissima</u> (Buckl.) Chase | Fringed signalgrass |
| <u>Buchloe dactyloides</u> (Nutt.) Engelm. | Buffalo grass |
| <u>Cenchrus pauciflorus</u> Benth. | Sandbur |
| <u>Chloris ciliata</u> Swartz | Fringed chloris |
| <u>Chloris cucullata</u> Bisch. | Hooded windmillgrass |
| <u>Chloris gayana</u> Kunth | Rhodes grass |
| <u>Cynodon dactylon</u> (L.) Pers. | Bermudagrass |
| <u>Dactyloctenium aegyptium</u> (L.) Richt. | Crowfoot-grass |
| <u>Digitaria decumbens</u> Stent. | Pangolagrass |
| <u>Digitaria runyoni</u> Hitchc. | Dune fingergrass |
| <u>Digitaria sanguinalis</u> (L.) Scop. | Large crabgrass |
| <u>Echinochloa colonum</u> (L.) Link | Jungle-rice |
| <u>Elyonurus tripsacoides</u> Humb. & Bonpl. | Pan American balsamscale |
| <u>Eragrostis secundiflora</u> Presl. | Red lovegrass |
| <u>Panicum fasciculatum</u> var. | |
| <u>reticulatum</u> (Torr.) Beal | Browntop millet |
| <u>Panicum hallii</u> Vasey | Hall's panicum |
| <u>Panicum maximum</u> Jacq. | Guinea grass |
| <u>Panicum nodatum</u> Hitch. & Chase | Sarita panicum |
| <u>Panicum purpurascens</u> Raddi | Para grass |
| <u>Pappophorum bicolor</u> Fourn. | Pink pappusgrass |
| <u>Paspalum monostachyum</u> Vasey | Gulfdune paspalum |
| <u>Paspalum plicatulum</u> Michx. | Brownseed paspalum |
| <u>Saccharum officinarum</u> L. | Sugarcane |
| <u>Setaria</u> sp. | Bristlegrass |
| <u>Setaria geniculata</u> (Lam.) Beauv. | Knotroot bristlegrass |
| <u>Setaria macrostachya</u> H. B. K. | Plains bristlegrass |
| <u>Setaria verticillata</u> (L.) Beauv. | Foxtail-grass |
| <u>Sorghastrum nutans</u> (L.) Nash | Indian grass |
| <u>Sorghum</u> sp. | Sorghum |
| <u>Sorghum halepense</u> (L.) Pers. | Johnson grass |
| <u>Sporobolus texanus</u> Vasey | Texas dropseed |
| <u>Stenotaphrum secundatum</u> (Walt.) Kuntze | St. Augustine grass |
| <u>Trachypogon montufari</u> (H. B. K.) Nees | Crinkleawn |
| <u>Trichloris pluriflora</u> Fourn. | Fourflower trichloris |
| <u>Tricholaena rosea</u> Ness | Natal grass |
| <u>Triodia albescens</u> Vasey | White triodia |
| <u>Vaseyochloa multinervosa</u> (Vasey) Hitchc. | Texasgrass |



LIBRARY
EXHIBIT SERIAL RECORD
DEC 20 1950
U. S. DEPARTMENT OF JUSTICE